

SECRETREPORT NO.

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COUNTRY Germany (Soviet Zone)

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DATE DISTR. 24 Feb. 1964

SUBJECT East German Power Stations and Factories
Visited by Polish Team of Experts

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DATE OF INFORMATION

REFERENCES:

PLACE ACQUIRED

THIS IS UNEVALUATED INFORMATION

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General

1. The visit of the Polish team of telecommunications experts to East Germany was approved and arranged by the Department of Cooperation with Other Countries within the State Commission of Economic Planning (PKPG). Final travel arrangements were made by the Bureau of Technical Documentation (Biuro Dokumentacji Technicznej) which is subordinate to the PKPG.
2. The purpose of the visit was to acquaint the Polish team with:
 - a. The existing telemetering and remote control system,
 - b. The carrier telecommunications system used in the East German electric power system,
 - c. The telecommunications equipment produced for central dispatching in the electric power system.

And further, that they might:

 - d. Consult on the subject of exploitation and conditions of work in telecommunications, and
 - e. Examine telecommunications equipment and components as well as sources of supply, especially the carrier system.
3. the delegation which consisted of three persons, One of them was an expert and consultant for the Ministry of Power on telecommunications equipment

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arrival in Berlin were introduced, with the Polish Commercial Mission in Berlin acting as intermediary, to the Ministry for Machine Construction (Ministerium für Maschinenbau) at 5/7 Leipziger Strasse. Later the Director of the Telecommunications Department of the State Secretariat for the Coal Industry (Staatsekretariat für Kohle und Energie), BARANOWSKY, took charge

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was spent visiting factories and power plants, each visit lasting from several hours to several days. [redacted] limited to telecommunications problems, and for that reason, [redacted] generally allowed to see only those parts of the installations or factories connected with such work.

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The Central Dispatching Department

4. The Central Dispatching Department was subordinate to the Ministry for Coal and Electric Power, and was located on the fifth floor of 5/7 Leipziger Street, Berlin. This department gave orders to the district dispatching points by means of special telecommunications equipment, principally by a carrier telephony system. It had two switch tables with two tape recorders and about 40 telemetering measuring instruments which registered various data, i.e., active and reactive power, frequency, tension and power factor of the most important points of the electric power system. The receiving telemetering equipment operated by means of an apparatus adapted to work with table connections or with the carrier telephony system. In addition, there was other equipment located in other sections of the buildings, such as a central switchboard for inside and outside telecommunications connections. The maintenance shop was equipped with portable measuring instruments and there was, in addition, a room equipped with batteries and converters which were automatically set in motion in case of lack of tension in the electric net. Most of this equipment was of an old type. We were told that there was a plan to modernize the equipment of the central dispatching installations. A certain part of this new equipment was in the first stage of construction, and production of another part had just started.

Klingenberg Power Plant, Berlin

5. The Klingenberg Power Plant is one of the largest power plants in East Germany with a working capacity of about 180 MW. The telecommunications equipment in the dispatching room was of an old type and was not all in working order. Only minor changes had been made by the employees of this power plant since World War II. A special switch table had been made to shut out the less important consumers in case of power shortage.

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they had many difficulties at this power plant in 1953.

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District Dispatching Office, Halle

6. This dispatching point had a normal dispatching table operated by two persons. Equipment was, in general, of an old type. There were 25 telemetering registering instruments on the vertical switch table. These instruments were connected with the most important substations and power plants of the district and with the Diskau substation.

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Diskau Substation

7. This substation is probably the largest in East Germany. The telecommunications equipment was in the development stage. A great deal of single and double-band carrier telephony equipment for telephony and telemetering was installed there. The single-band carrier telephony apparatus was installed as an experimental model to ascertain its capabilities. Judging by the notes in the control workbook and in the statistics book listing defects, I came to the conclusion that the model was a very poor one.

Zschornowitz Power Plant

8. The Zschornowitz Power Plant is one of the most important power plants in East Germany with a working capacity of about 160 MW. In 1952 a special building was constructed for the telecommunications equipment and a great deal of single and double-band carrier telephony equipment of new, East German production installed. In addition, storage batteries and auxiliary aggregators which were automatically set in motion in case of lack of tension in the net were installed in the basement of the building.

S-Bahn Dispatching Point, Berlin

9. The S-Bahn dispatching point, located in the neighborhood of Warschauer Brücke, is the most important dispatching point in the electric railway net of East Berlin. All orders and control signals are given from this dispatching point to the larger part of the S-Bahn net. The vertical switch table at this station is of an elliptical shape, 60 by 30 ft. The switch table for transmitting orders is connected by telecommunications cables with all important switches and regulating equipment by which the electric current is regulated in the S-Bahn net. Most of the equipment is rather old but from time to time replacements are made with new, East German equipment.

High-Frequency Equipment Factory, Berlin/Oberschöneweide (HF-Werke Berlin/Oberschöneweide)

10. /See Annex A./ The HF factory was a large factory which produced telecommunications equipment units and components as well as electronic tubes of various types. The tubes produced included micro tubes, standard radio receiving tubes, radio receiving tubes for special technical purposes, special micro-wave tubes, CRT and electronic switches. In addition, the factory produced single-band telephony equipment for high tension lines and remote control equipment. There was, in July 1953, a new system of telemetering device for high tension lines under construction. This system was based on a new principle with an electromechanical negative feedback. A new cycling telemetering system based on the electronic switching device was also under construction.

RFT Factory (RFT Werke), Berlin/Treptow

11. /See Annex B./ The production of RFT Treptow included double-band carrier equipment, standard final apparatus, final apparatus with continuous carrier wave, intermediate amplifiers, and apparatus for the six channel telemetering on the audio frequency band. It also produced automatic parts for carrier telephony equipment, such as choke coils, line filters, and automatic switchboards. A model of a special apparatus was made which permitted connecting every high tension line for the purpose of getting direct communications connections. Connection of the high tension lines was accomplished by means of an aerial. The model was built on Soviet request. In addition, the factory produced a number of components, principally relays and selectors.

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Power Transformer Factory - Karl Liebknecht (Transformatorenwerk Karl Liebknecht), Berlin

12. This factory produced, primarily, power transformers and shock wave generators, as well as coupling units for telecommunications on high tension lines, namely, high tension condensers, twin frequency and wide-band choke coils. An experiment was in progress in the experimental laboratory of this factory involving a wide-band choke coil with a dust core.

Turbonit Factory (Turbonit Werke), Berlin

13. This factory was located on Lehder Strasse in Berlin. It produced a large quantity of various insulating materials from plastics and bakelized paper such as protecting tubes, sheets, sticks, etc. In addition it produced coupling condensers used for telecommunications on high tension lines. The condensers were used for medium and high voltage.

Klara Zetkin Repair Factory (Reparatur Werke Klara Zetkin), Erfurt

14. This factory occupied several buildings some of which had been recently constructed. It repaired large power generators, transformers, and motors. There were, two 50X1 turbo-generators from Poland under repair. One generator, 40 MVA, was from the Chorzow Power Plant, and the other, 45 MVA, was from the Victoria Power Plant.

RFT Factory (RFT Werke), Dresden

15. The main production of this factory consisted of various kinds of special electronics measuring instruments, such as pulse generators, CRT pulse oscilloscopes, instruments to detect damage on high tension lines, USW equipment for the police, etc. In addition, it produced and repaired broadcast receivers. The factory employed about 300 workers.

RFT Factory (RFT Werke), Erfurt

16. The factory occupied several large buildings which were located in various parts of Erfurt. Electronic tubes of various types and measuring electronic apparatus for low and high frequency were the chief production. It employed about 800 people.

Clamann, Grahmert Factory (Clamann & Grahmert Werke), Dresden

17. This was a small private firm which employed about 50 people. It produced electronics equipment, such as vacuum tubes, voltmeters, high and low frequency generators, level meters, and telephone line measuring equipment. The factory was faced with many difficulties, including power shortage, shortage of materials, and labor problems.

Condenser Factory (Kondensatoren Werke), Gera

18. [See Annex C.] This factory occupied two large buildings; one was of new construction. It produced all types of condensers from the common condenser used in radio receivers to the condensers used to correct the power factor in power grids. Some iron dust core choke coils were produced. The factory did not produce ceramic condensers.

Conclusions

19. After completing the visit, the Polish delegation came to the following conclusions concerning East Germany's production of telecommunications equipment and system:

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- a. There was a great shortage of all kinds of materials and components for telecommunications equipment. The German designers were hampered by lack of essential materials and semi-finished products. There was a lack of dust cores, inductor cores, radio tubes, and selectors. The equipment produced was not reliable in operation.
- b. The equipment produced was of much lower quality than that manufactured before World War II.
- c. The telemetering equipment used in 1953 in the East German power grid was of an old type, and was based on the old German equipment produced by Siemens and AEG. The construction of new telemetering equipment was only in the test stage. The new electromechanic system chosen could operate without electronic tubes but it was very complicated and unreliable.
- d. The double-band carrier equipment produced was of mediocre quality.
- e. Remote control was not used in the East German power grid. The recently produced remote control equipment for electric railways was unsuitable for use in telecommunications of the electric power grid because the time of transmittal was too long.
- f. Spare parts for the carrier telephony equipment ZCK-100 and ZCK-300 of Swedish production could not be bought in East Germany.
- g. 50X1
East German factories and power plants had great difficulties with labor. The young workers were regarded as generally unreliable; many escaped to West Germany. The engineers and designers, especially all persons occupying high official positions, were discouraged by existing conditions. They spoke cautiously, but critically, of Russian technical literature and production.

ANNEXES:

- A. Overlay Showing Approximate Location of the HF Werke Oberschöneweide - Berlin
- B. Overlay Showing Approximate Location of the RFT Werke Treptow - Berlin
- C. Overlay Showing Approximate Location of the Kondensatoren Werke - Gera

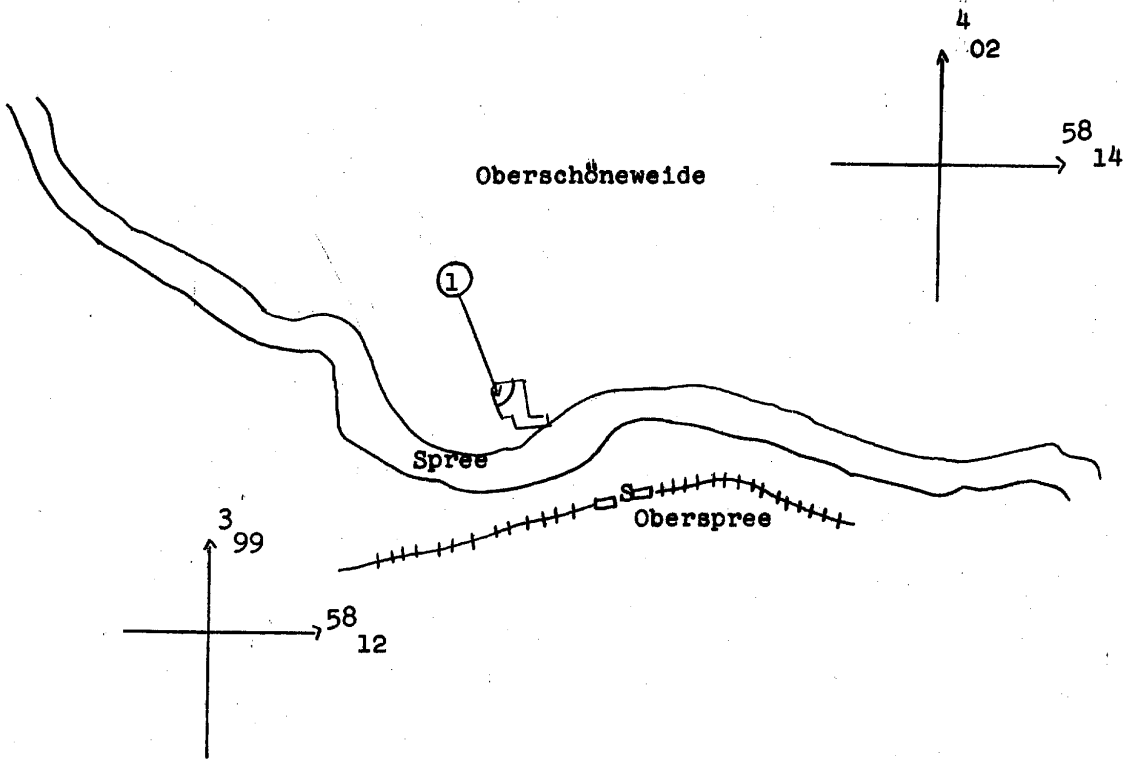
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ANNEX A:

Overlay Showing Approximate Location of the "HF Werke Oberschöneweide - Berlin, Sheet 40F4 Scale 1:25,000, Overlay Based on City Plan of Berlin



LEGEND

- 1. Area where the factory HF-Oberschöneweide is located.

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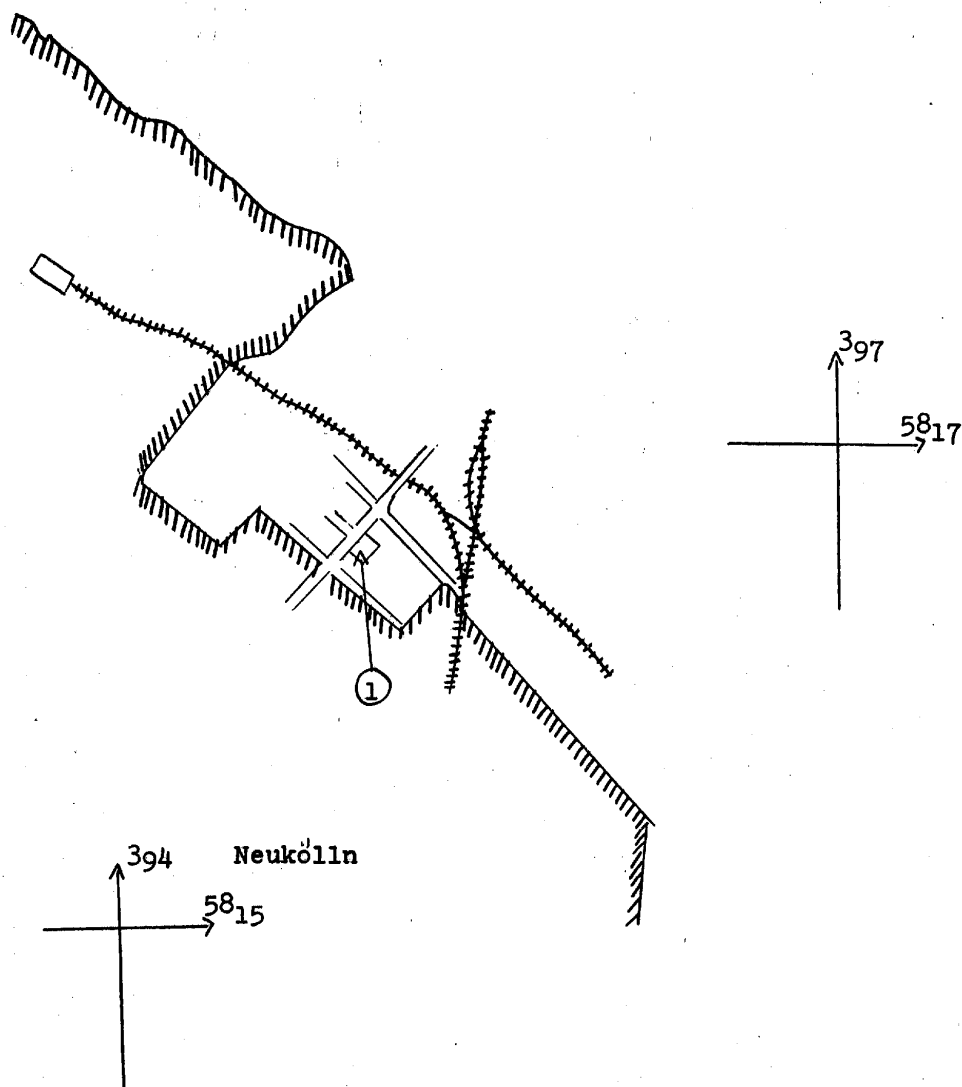
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ANNEX B:

Overlay Showing Approximate Location of the RFT Werke Treptow - Berlin
Overlay Based on City Plan of Berlin, Sheet 40F4 Scale 1:25,000



LEGEND

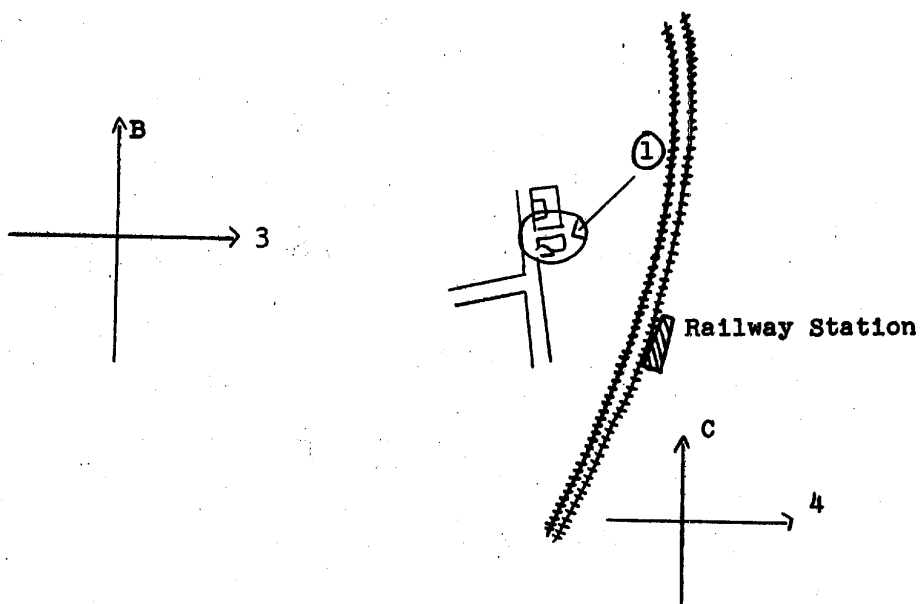
1. Area where the "RFT" Factory is located.

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ANNEX C:

Overlay Showing Approximate Location of the Kondensatoren Werke - Gera
Overlay Based on City Plan of Gera 1:10,000



Legend

1. Area where the factory of electrical condensers is located.

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